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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/099,923

03/14/2002

John H. Oates

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EXAMINER

GHULAMALI, QUTBUDDIN

ART UNIT

PAPER NUMBER

2637

DATE MAILED: 03/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/099,923

Applicant(s)

OATES, JOHN H.

Examiner

Qutub Ghulamali

Art Unit

2637

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16-20 is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☒ Claim(s) 11-15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5, 6.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-10 is rejected under 35 U.S.C. 102(b) as being anticipated by Naruse et al (USP 6,014,408).

Regarding claim 1, Naruse discloses a spread spectrum system processes a plurality of waveforms transmitted by respective users, the system comprising:

two registers (multiple) associated with l^{th} and k^{th} users each for storing elements of a code sequence associated with one of the l^{th} and k^{th} users, an alignment of the code sequence loaded in one register being shifted relative to that of the other register by m elements (col. 3, lines 49-65; col. 4, lines 46-65; col). ,

two further registers, each for storing mask sequences associated with the code sequences of a respective one of the l^{th} and k^{th} users, such that a mask element is zero or non-zero if a corresponding element of the associated code sequence is zero or non-zero, respectively, an alignment of the mask sequence in one of the further registers being shifted relative to those in the other of the further registers by m elements (col. 4, lines 6-37; col. 5, lines 1-26),

a logic unit (XOR(306), AND(305A-E)) coupled to said registers for performing an arithmetical operation on said code sequences and mask sequences to generate, for m^{th} transmitted symbol, (l, k) element of a matrix that represents correlations among the code sequences associated with the respective users (col. 10, lines 30-67).

Regarding claims 2, 8, Naruse discloses arithmetical operation comprises obtaining a sum of multipliers of non-zero aligned elements of the code sequences (col. 8, lines 16-45).

Regarding claims 3, 4-5, 9 Naruse discloses:

- (i) performing an XOR operation between the code elements (col. 4, lines 46-55),
- (ii) performing an AND operation between the mask elements (col. 4, lines 24-30),
- (iii) performing an AND operation between results of the step (i) and step (ii) to generate a multiplier corresponding the aligned elements (col. 10, lines 63-67; col. 11, lines 1-5), and
- (iv) summing the multipliers to generate the (l, k) element of the matrix (col. 12, lines 9-12).

As per claim 6, Naruse discloses storage for storing the computed matrix representing correlations among the code sequences associated with the users (abstract; col. 3, lines 49-65).

As per claim 10, Naruse discloses storing the matrix in persistent memory (col. 8, lines 46-64).

Allowable Subject Matter

3. Claims 11-15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. Claim 16-20 allowed.

5. The following is an examiner's statement of reasons for allowance:

Consider claims 16, the prior art of interest, considered as a whole, neither teaches nor suggest the overall combination that lends to improvement in a spread spectrum system comprising: computing a matrix indicative of correlations among codes from users and computing a matrix indicative of cross correlation among waveforms transmitted as a function of the matrix representing correlations among the code sequences.

Such limitations, as recited in claim 16, is neither anticipated nor rendered obvious by the prior art.

Claims 17-20, are allowed by virtue of their dependency to base claim highlighted above.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patents:

Sasaki (USP 6,339,781) shows M-sequence generator and PN code with mask table.

Spock (USP 5,903,550) discloses method and system for parallel demodulation in a communication system.

Fukawa et al (USP 6,128,332) shows a spread spectrum transmitter and receiver for spreading codes sequences.

Nguyen (USP 6,058,465) discloses a vector processing architecture having data elements of programmable size and type.

Behrens et al (USP 5,892,632) shows sampled read channel and residue number in an adaptive equalizer.

Gilhousen et al (USP 5,943,361) discloses a system and method for generating signal waveforms in a CDMA cellular system.

Tiedemann, Jr. et al (USP 5,802,105) discloses, a method and apparatus, for testing digital communication channel.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Qutub Ghulamali whose telephone number is (571) 272-3014. The examiner can normally be reached on Monday-Friday from 8:00AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

QG.
March 17, 2005.

A handwritten signature in black ink, appearing to read 'J. Patel', with a long horizontal flourish extending to the right.

JAY K. PATEL
SUPERVISORY PATENT EXAMINER